

WHAT IS CLAIMED IS:

1. A photoconductive switch module comprising:
a first substrate having light-emitting elements;
a second substrate having photoconductive switch
5 elements, whose number is equal to that of the light-
emitting elements, the light-emitting elements and the
photoconductive switch elements being arranged to face
each other, the photoconductive switch elements being
turned on/off in accordance with lighting/distinction
10 of the light-emitting elements; and
a third substrate arranged between the first
substrate and the second substrate, the third substrate
having the through holes, whose number is equal to that
of the light-emitting elements, drive light emitted
15 from the light-emitting element being trapped within
the through hole to travel to the photoconductive
switch element, and the first substrate and the third
substrate being connected to each other by heating and
pressure contacting of first metal members.
- 20 2. The photoconductive switch module according to
claim 1, wherein the second substrate and the third
substrate are connected to each other by heating and
pressure contacting of second metal members.
- 25 3. The photoconductive switch module according to
claim 1, wherein the third substrate has first concave
portions formed on the side facing the first substrate,
and the first metal members are provided at the first

concave portions.

4. The photoconductive switch module according to claim 3, wherein the third substrate has first electrode pads provided at bottom surfaces of the first concave portions, second electrode pads provided at parts excluding the first concave portions in the surface facing the first substrate, and wirings electrically connecting the first electrode pads with the second electrode pads, the first metal members connecting the first substrate with the third substrate are provided on the first electrode pads so that the second electrode pads are electrically connected to the light-emitting elements through the first metal members.

5. The photoconductive switch module according to claim 2, wherein the third substrate has second concave portions formed on the side facing the second substrate, and the second metal members are provided at the second concave portions.

6. The photoconductive switch module according to claim 1, wherein the first metal members connecting the first substrate with the third substrate contain gold, and the first substrate and the third substrate respectively have metal thin films containing gold, which are provided in areas including parts where the first metal members are bonded.

7. The photoconductive switch module according to

claim 2, wherein the second metal members connecting the second substrate with the third substrate contain gold, and the second substrate and the third substrate respectively have metal thin films containing gold, which are provided in areas including parts where the second metal members are bonded.

8. The photoconductive switch module according to claim 2, wherein the first metal members connecting the first substrate with the third substrate and the second metal members connecting the second substrate with the third substrate are provided at positions that overlap in a vertical direction of the third substrate.

9. The photoconductive switch module according to claim 2, wherein the second substrate has a wiring provided on the side facing the third substrate through the photoconductive switch and a ground electrode provided on the side facing the third substrate, the third substrate has an electro-conductive part at least in the vicinity of the surface facing the second substrate, and the electro-conductive part of the third substrate is electrically connected to the ground electrode of the second substrate through the second metal members connecting the second substrate with the third substrate.

10. The photoconductive switch module according to claim 4, wherein each first concave portion has slant side surfaces.

11. A manufacturing method of a photoconductive switch module that has a first substrate having light-emitting elements, a second substrate having photoconductive switch elements, whose number is equal
5 to that of the light-emitting elements, and a third substrate arranged between the first substrate and the second substrate, the third substrate having through holes, whose number is equal to that of the light-emitting elements, the light-emitting elements and the
10 photoconductive switch elements being arranged to face each other via through holes, the photoconductive switch elements being turned on/off in accordance with lighting/extinction of the light-emitting elements, and drive light emitted from each light-emitting element
15 being trapped within each through hole to travel to each photoconductive switch element, the manufacturing method comprising:

providing first metal members on a first surface of the third substrate facing the first substrate; and
20 connecting the first substrate with the third substrate by heating and pressure contacting of the first metal members.

12. The manufacturing method of a photoconductive switch module according to claim 11, further
25 comprising:

providing second metal members on a second surface of the third substrate facing the second substrate; and

connecting the second substrate with the third substrate by heating and pressure contacting of the second metal members.